

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

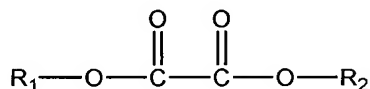
**LISTING OF CLAIMS:**

1. (Currently Amended) An organic electrolytic solution for use in a lithium sulfur battery comprising:

a lithium salt;

an organic solvent; and

an oxalate compound of formula (1) below:



...(1)

where R<sub>1</sub> and R<sub>2</sub> are independently selected from hydrogen atom, halogen atom, a hydroxy group, a substituted or unsubstituted C<sub>1</sub>-C<sub>20</sub> alkyl group, a substituted or unsubstituted C<sub>1</sub>-C<sub>20</sub> alkoxy group, a substituted or unsubstituted C<sub>1</sub>-C<sub>20</sub> alkenyl group, a substituted or unsubstituted C<sub>6</sub>-C<sub>30</sub> aryl group, a substituted or unsubstituted C<sub>6</sub>-C<sub>30</sub> arylalkyl group, a substituted or unsubstituted C<sub>6</sub>-C<sub>30</sub> aryloxy group, a substituted or unsubstituted C<sub>2</sub>-C<sub>30</sub> heteroaryl group, a substituted or unsubstituted C<sub>2</sub>-C<sub>30</sub> heteroarylalkyl group, a substituted or unsubstituted C<sub>2</sub>-C<sub>30</sub> heteroaryloxy group, a substituted or unsubstituted C<sub>5</sub>-C<sub>20</sub> cycloalkyl group, and a substituted or unsubstituted C<sub>2</sub>-C<sub>20</sub> heterocycloalkyl group, and

dimethylether ( $\text{CH}_3(\text{OCH}_2\text{CH}_2)_3\text{OCH}_3$ ), and triethyleneglycol diethylether ( $\text{C}_2\text{H}_5(\text{OCH}_2\text{CH}_2)_3\text{OC}_2\text{H}_5$ ).

6. (Previously Presented) The organic electrolytic solution of claim 4, wherein the organic solvent comprises a dioxolane, which is at least one selected from the group consisting of include 1,3-dioxolane, 4,5-diethyl-dioxolane, 4,5-dimethyl-dioxolane, 4-methyl-1,3-dioxolane, and 4-ethyl-1,3-dioxolane.

7. (Original) The organic electrolytic solution of claim 4, wherein the organic solvent is a mixture of the polyglyme and the dioxolane in a ratio of 1:9-9:1 by volume.

8. (Previously Presented) The organic electrolytic solution of claim 4, wherein the organic solvent comprises a carbonate, which is at least two selected from the group consisting of ethylene carbonate, methylene carbonate, diethyl carbonate, dimethyl carbonate,  $\gamma$ -butyrolactone, propylene carbonate, methyl ethyl carbonate, and vinylene carbonate.

9. (Original) The organic electrolytic solution of claim 1, wherein the organic solvent is at least one of a polyglyme and a dioxolane.

10. (Original) The organic electrolytic solution of claim 9, wherein the polyglyme for the organic solvent is selected from the group consisting of diethyleneglycol dimethylether ( $\text{CH}_3(\text{OCH}_2\text{CH}_2)_2\text{OCH}_3$ ), diethyleneglycol diethylether

wherein the amount of the oxalate compound of said formula (1) is in a range of 0.001-10 parts by weight with respect to 100 parts by weight of the organic solvent, and

wherein during use in said lithium sulfide battery said oxalate compound of formula (1) chelates with lithium ions and bonding between lithium ions and sulfide anions is blocked so that the solubility of sulfide ions is improved.

2. (Canceled).

3. (Original) The organic electrolytic solution of claim 1, wherein the oxalate compound of said formula (1) is selected from the group consisting of diethyl oxalate, dimethyl oxalate, dipropyl oxalate, dibutyl oxalate, and bis-(4-methylbenzyl) oxalate.

4. (Original) The organic electrolytic solution of claim 1, wherein the organic solvent is at least one selected from the group consisting of a polyglyme, a dioxolane, a carbonate, 2-fluorobenzene, 3-fluorobenzene, 4-fluorobenzene, dimethoxyethane, diethoxyethane, and sulfolane.

5. (Previously Presented) The organic electrolytic solution of claim 4, wherein the organic solvent comprises a polyglyme selected from the group consisting of diethyleneglycol dimethylether ( $\text{CH}_3(\text{OCH}_2\text{CH}_2)_2\text{OCH}_3$ ), diethyleneglycol diethylether ( $\text{C}_2\text{H}_5(\text{OCH}_2\text{CH}_2)_2\text{OC}_2\text{H}_5$ ), triethyleneglycol

( $\text{C}_2\text{H}_5(\text{OCH}_2\text{CH}_2)_2\text{OC}_2\text{H}_5$ ), triethyleneglycol dimethylether ( $\text{CH}_3(\text{OCH}_2\text{CH}_2)_3\text{OCH}_3$ ), and triethyleneglycol diethylether ( $\text{C}_2\text{H}_5(\text{OCH}_2\text{CH}_2)_3\text{OC}_2\text{H}_5$ ).

11. (Original) The organic electrolytic solution of claim 9, wherein the dioxolane for the organic solvent is at least two selected from the group consisting of include 1,3-dioxolane, 4,5-diethyl-dioxolane, 4,5-dimethyl-dioxolane, 4-methyl-1,3-dioxolane, and 4-ethyl-1,3-dioxolane.

12. (Original) The organic electrolytic solution of claim 9, wherein the organic solvent further comprises at least one selected from the group consisting of sulfolane, dimethoxyethane, and diethoxyethane.

13. (Original) The organic electrolytic solution of claim 1, wherein the organic solvent is at least one selected from the group consisting of a carbonate, 2-fluorobenzene, 3-fluorobenzene, 4-fluorobenzene, dimethoxyethane, diethoxyethane, and sulfolane.

14. (Previously Presented) The organic electrolytic solution of claim 13, wherein the organic solvent comprises a carbonate, which is at least one selected from the group consisting of ethylene carbonate, methylene carbonate, diethyl carbonate, dimethyl carbonate,  $\gamma$ -butyrolactone, propylene carbonate, methyl ethyl carbonate, and vinylene carbonate.

15. (Original) The organic electrolytic solution of claim 1, wherein the lithium salt has a concentration of 0.5-2.0M.

16. (Currently Amended) A lithium sulfur battery comprising:

a cathode;

an anode;

a separator interposed between the cathode and the anode; and

the organic electrolytic solution of claim 1.

17. (Currently Amended) The lithium sulfur battery of claim 16, wherein the cathode is formed of at least one selected from the group consisting of a lithium composite oxide, simple substance sulfur, kasolite containing  $\text{Li}_2\text{S}_n$  where  $n \geq 1$ , organo-sulfur, and  $(\text{C}_2\text{S}_x)_y$  where  $x$  ranges from 2.5 to 20 and  $y \geq 2$ .

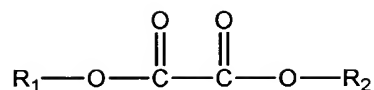
18. (Currently Amended) The lithium sulfur battery of claim 16, wherein the anode is formed as a lithium metal electrode, a lithium-metal alloy electrode, a lithium-inert sulfur composite electrode, a carbonaceous electrode, or a graphite electrode.

19. (Currently Amended) An organic electrolytic solution for use in a sulfur battery comprising:

a lithium salt;

an organic solvent; and

an oxalate compound of formula (1) below:



...(1)

where  $R_1$  and  $R_2$  are independently selected from hydrogen atom, halogen atom, a hydroxy group, a substituted or unsubstituted  $C_1$ - $C_{20}$  alkyl group, a substituted or unsubstituted  $C_1$ - $C_{20}$  alkoxy group, a substituted or unsubstituted  $C_1$ - $C_{20}$  alkenyl group, a substituted or unsubstituted  $C_6$ - $C_{30}$  aryl group, a substituted or unsubstituted  $C_6$ - $C_{30}$  arylalkyl group, a substituted or unsubstituted  $C_6$ - $C_{30}$  aryloxy group, a substituted or unsubstituted  $C_2$ - $C_{30}$  heteroaryl group, a substituted or unsubstituted  $C_2$ - $C_{30}$  heteroarylalkyl group, a substituted or unsubstituted  $C_2$ - $C_{30}$  heteroaryloxy group, a substituted or unsubstituted  $C_5$ - $C_{20}$  cycloalkyl group, and a substituted or unsubstituted  $C_2$ - $C_{20}$  heterocycloalkyl group,

wherein the amount of the oxalate compound of said formula (1) is in a range of 0.001-10 parts by weight with respect to 100 parts by weight of the organic solvent,

wherein during use in said lithium sulfide battery said oxalate compound of formula (1) chelates with lithium ions and bonding between lithium ions and sulfide anions is blocked so that the solubility of sulfides anions is improved, and

wherein the oxalate compound of said formula (1) is selected from the group consisting of diethyl oxalate, dimethyl oxalate, dipropyl oxalate, dibutyl oxalate, and bis-(4-methylbenzyl) oxalate, and

wherein the organic solvent is at least one selected from the group consisting of a polyglyme, a dioxolane, a carbonate, 2-fluorobenzene, 3-fluorobenzene, 4-fluorobenzene, dimethoxyethane, diethoxyethane, and sulfolane.

20. (Previously Presented) The organic electrolytic solution of claim 19, wherein the organic solvent comprises a polyglyme selected from the group consisting of diethyleneglycol dimethylether ( $\text{CH}_3(\text{OCH}_2\text{CH}_2)_2\text{OCH}_3$ ), diethyleneglycol diethylether ( $\text{C}_2\text{H}_5(\text{OCH}_2\text{CH}_2)_2\text{OC}_2\text{H}_5$ ), triethyleneglycol dimethylether ( $\text{CH}_3(\text{OCH}_2\text{CH}_2)_3\text{OCH}_3$ ), and triethyleneglycol diethylether ( $\text{C}_2\text{H}_5(\text{OCH}_2\text{CH}_2)_3\text{OC}_2\text{H}_5$ ), or

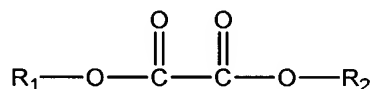
wherein the organic solvent comprises a dioxolane, which is at least one selected from the group consisting of include 1,3-dioxolane, 4,5-diethyl-dioxolane, 4,5-dimethyl-dioxolane, 4-methyl-1,3-dioxolane, and 4-ethyl-1,3-dioxolane.

21. (Currently Amended) An organic electrolytic solution for use in a lithium sulfur battery comprising:

a lithium salt;

an organic solvent; and

an oxalate compound of formula (1) below:



...(1)

where  $R_1$  and  $R_2$  are independently selected from hydrogen atom, halogen atom, a hydroxy group, a substituted or unsubstituted  $C_1$ - $C_{20}$  alkyl group, a substituted or unsubstituted  $C_1$ - $C_{20}$  alkoxy group, a substituted or unsubstituted  $C_1$ - $C_{20}$  alkenyl group, a substituted or unsubstituted  $C_6$ - $C_{30}$  aryl group, a substituted or unsubstituted  $C_6$ - $C_{30}$  arylalkyl group, a substituted or unsubstituted  $C_6$ - $C_{30}$  aryloxy group, a substituted or unsubstituted  $C_2$ - $C_{30}$  heteroaryl group, a substituted or unsubstituted  $C_2$ - $C_{30}$  heteroarylalkyl group, a substituted or unsubstituted  $C_2$ - $C_{30}$  heteroaryloxy group, a substituted or unsubstituted  $C_5$ - $C_{20}$  cycloalkyl group, and a substituted or unsubstituted  $C_2$ - $C_{20}$  heterocycloalkyl group,

wherein the oxalate compound of said formula (1) is selected from the group consisting of diethyl oxalate, dimethyl oxalate, dipropyl oxalate, dibutyl oxalate, and bis-(4-methylbenzyl) oxalate, and

wherein during use in said lithium sulfur battery said oxalate compound chelates with lithium ions and bonding between lithium ions and sulfide anions is blocked so that the solubility of sulfide anions is improved, and

wherein the organic solvent is at least one selected from the group consisting of a polyglyme, a dioxolane, 2-fluorobenzene, 3-fluorobenzene, 4-fluorobenzene, dimethoxyethane, diethoxyethane, and sulfolane.

22. (New) The organic electrolyte solution of claim 1, wherein the oxalate compound of formula (1) is in the range of 0.05 - 1 part by weight with respect to 100 parts by weight of the organic solvent.